

CLAIMS:

1. A method of scheduling schedulable component in a hard real time system for processing time dependent streams of data elements, where the number of schedulable components is larger than the number of available processors for processing said components and where each of said components has at least one input and one output characterized in that the method comprises the steps of consecutively:

- determining for each schedulable component the earliest time on which said component can contribute to the output of said hard real time system,
- scheduling the schedulable component that can contribute to the output of said real time system at the total earliest time.

2. A method according to claim 1, wherein if a number of schedulable components contribute to the output of said real time system at the same total earliest time, then scheduling of said number of components is performed using push scheduling.

3. A method according to claim 1 or 2, wherein a length of a predefined time interval is specified for each component and a component is schedulable when time stamped data elements from said predefined time interval of said time dependent stream of time stamped data element is available at all inputs of said component.

4. A method according to claim 3, wherein the availability of said predefined time interval of said time stamped data elements is determined by defining a begin time and an end time of said predefined time interval and checking when the time, until which data has been processed by a preceding component, is newer than the end time of said predefined time interval.

5. A method according to claim 3 or 4 wherein the step of determining the earliest time on which said component can contribute to the output is performed by:

- identifying possible paths of subsequent components that the data elements have to be processed by in order to reach the output of said system from said component,

- determining an earliest contribution time for each possible path by subtracting from the begin time of said predefined time interval the length of each of the predefined time intervals specified for each of said subsequent components in said path.
- determining the earliest time on which said component can contribute to the output as the earliest determined contribution time.

6. A method according to claim 3 or 4, wherein the step of determining the earliest time on which said component can contribute to the output is performed by:

- identifying a path of subsequent components that the data elements have to be processed by in order to reach the output of said system from said component,
- determining an earliest contribution time for each possible path by subtracting from the begin time of said predefined time interval, the length of each of the predefined time intervals specified for each of said subsequent components in said path, where at least some of said predefined time intervals have been subtracted a displacement value.
- determining the earliest time on which said component can contribute to the output as the earliest determined contribution time.

7. A hard real time system for processing time dependent streams of data elements, said system comprising a number of components and a number of processors for processing components, said number of components is larger than the number of processors, each of said components having at least one input and at least one output, said system comprises means for determining for each schedulable component the earliest time on which said component can contribute to the output of said hard real time system, and means for scheduling the schedulable component that can contribute to the output of said real time system at the total earliest time.